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ABSTRACT

Techniques employed in the study included: an examination of the relevant literature; actual visitation and interviews with directors, associate directors, assistant directors, heads of appropriate divisions of the selected and other libraries, vice-presidents for business and finance, deans, budget officers and budget managers of the institutions visited. In an attempt to maintain a common basis for inquiry, a questionnaire was developed and was used in the process of the field interviews. The questionnaire results appear as an appendix to this report. The responses, while representing only a small segment of the research library population, are sufficient to provide some intriguing insights into the present state of research library budgeting. It was inevitable that questions concerning budgets, financial support and fiscal management would lead into an exploration of management and administrative problems in general. Thus the questions range from the effect of the current economic recession on library schools to the impact of faculty status on a library's budget. (Author/NH)

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CURRENT AND EMERGING BUDGETING TECHNIQUES IN ACADEMIC LIBRARIES, INCLUDING A CRITIQUE OF THE MODEL BUDGET ANALYSIS PROGRAM OF THE STATE OF WASHINGTON

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April 1972

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PREFACE

This report presents the findings of a study of present and emerging budgeting practices among large academic libraries as observed during the 1971-1972 academic year.

The Council on Library Resources generously funded field research to selected universities during the Fall Quarter, 1971. The University of Washington granted professional leave during that period. The observations, comments and projections presented are those of the author and may not represent the opinions of either the Council on Library Resources or the University of Washington Libraries.

I deeply appreciate the generous support of the two sponsoring organizations and sincerely hope that this report contributes to the evaluation and understanding of library budgeting techniques. I also wish to express my gratitude to all the library and other university administrators who displayed an interest and understanding during the interviews.

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CURRENT AND EMERGING BUDGETING TECHNIQUES IN ACADEMIC LIBRARIES, INCLUDING A CRITIQUE OF THE MODEL BUDGET ANALYSIS PROGRAM OF THE STATE OF WASHINGTON

INTRODUCTION

This study was undertaken primarily to assist academic libraries in equating their position within a rapidly evolving budget practice environment. Preliminary investigations undertaken to establish the direction of the study revealed critical voids which must be resolved before much progress can be made. First, there is no universal agreement as to what is happening in the field of library budgeting and, therefore, no concrete base of reference. Second, much has been written about current and potential budget practices, but most of the articles are theoretical and expound on the strengths or weaknesses of one technique only. Application and side-by-side comparison is limited. Third, there is in some libraries a lack of recognition that change is imminent, and librarians must begin to evaluate their situation and weigh the alternatives.

Techniques employed in the study included: an examination of the relevant literature; actual visitation and interviews with directors, associate directors, assistant directors, heads of appropriate divisions of the selected and other libraries, vice-presidents for business and finance, deans, budget officers and budget managers of the institutions visited.

In an attempt to maintain a common basis for inquiry, a questionnaire was developed and was used in the process of the field interviews. The questionnaire results appear as an appendix to this report. The responses, while representing only a small segment of the research library population, are sufficient to provide some intriguing insights into the present state of research library budgeting. It was inevitable that questions concerning budgets, financial support and fiscal management would lead into an exploration of management and administrative problems in general. Thus the questions range from the effect of the current economic recession on library schools to the impact of faculty status on a library's budget.

The Climate of the Study

In retrospect it appears that the early sixties were the golden age for higher education. In comparison to the early seventies, budgets were relatively good, grants were fairly easy to obtain, and the federal government was providing financial support across a wide spectrum for higher education. Beginning in 1969 and continuing through 1971, universities suffered through a period of agonizing but transitory hysteria. By September of 1971, the beginning of the present study, student unrest had subsided and universities and colleges were engaged in the process of reassigning their

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internal priorities and repairing their public image.[1] Unfortunately, the image of university administration buildings under siege, classroom disruptions, property damage and destruction remained for various reasons firmly implanted in the minds of members of legislative assemblies. There was a strong anti-intellectualism, anti-higher education feeling throughout the Nation. Legislators, reflecting the mood of the people, were in a punitive frame of mind. There was a general feeling of non-support for graduate education, and an almost paranoiac feeling against public supported research in universities. Thus libraries were caught up in the process of attempting to justify the expensive nature of graduate or research oriented materials at a time when there was no market. This legislative hostility, reflected in reduced fiscal support accompanied by a reduction in foundation and federal support caused additional budgetary deterioration. Instability in current legislative acts generally included a "reduction" or "give back" promise of up to ten percent. With few exceptions, budgets for large research libraries were being reduced on a percentage basis of from 10-20 percent. The impact of this trend must also be magnified by the continuing inflationary factors such as appreciation of various foreign currencies, the devaluation of the American dollar, and across the board cost of living adjustments. The net result is that a stated reduction of 14% could actually lead to as much as a 30% depletion of buying power. This high percentage reduction was significant to a large research library purchasing as much as fifty percent of its foreign business in Western Europe and the Far East. This was not an untypical situation. Finally, it was very apparent that legislative bodies were "mandating" how institutions carry out legislative intent in certain administrative budgetary matters. Monitoring of such intent, running the gamut from specifying classroom hour exposure per faculty member to providing specific amounts to be spent on innovative programs was generally assigned to a central budget agency. To see that its wishes were carried out, budget agencies were being strengthened by adding to staff very knowledgeable individuals who were cost benefit analysis oriented. This was happening at both the state and institutional levels.

Institutional baffling, and actual harrassment were the order of the day. In addition to political factors, both internal and external, affecting

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[1] Eldon L. Johnson, From Riot to Reason, (Urbana, Illinois: University of Illinois Press, 1971), pp. 127.

A concise volume in which the Vice-President of the University of Illinois cites crises which have hit campuses at vulnerable points and suggests reappraisal of and reform in university government to include, among other things, new academic constitutions giving students an enlarged voice and the development of means to protect the institution both from disruptive acts and from the currently popular but potentially devastating threat of politicization. Dr. Johnson asserts that "the academic community must work together to re-establish the identity of the university, assert its potential for leadership and restore belief in an institution which is now a 'punching bag' for gleeful politicians, because it has lost its capacity for institutional recoil."

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higher education was the hard fact of life that the country was in a recession. In the face of legitimate demands by minority groups and the economically depressed for a greater share of the Nation's wealth, the cold economic fact was that there were fewer and smaller dollars to go around. It was a time for reassessment and reordering of priorities.' It was unquestionably a time to discover how the large research library was going to fare under the new conditions. Hence, the questionnaire was an attempt to establish the necessary background for performing the more specific charge of evaluating the nature and extent of performance and/or formula budgeting.

The Questionnaire Results

As briefly noted in the introduction, a questionnaire was developed for use in the field interviews. In addition to providing general background for the specific developments relating to emerging budgetary patterns, it was anticipated that reasons for the prevalence of one type of budgeting over another would be of significance; the nature of the administrative structure of an institution might relate to a library's budgetary success or failure; the degree to which a library was properly staffed in a management sense might relate to budgetary success or failure; and finally, there was the obvious need to maintain consistency from interview to interview in the questions asked. It is not proposed that the questionnaire provided the sum total of all the queries made; however, it did provide for a better understanding of the general budget environment as it presently exists.

Budgeting: Method Identification

Since large research libraries are a sub-unit of a larger educational system and since the educational system is part of a larger governmental structure, it follows that the direction for development and implementation of Planning, Programming, Budgeting Systems for libraries rests with parent agencies. It seems logical then to examine the budgetary antecedents to determine the extent to which PPBS or formula systems increase the managerial visibility within the library.

The basic types and approaches to budgeting in general use, and their concepts used in this paper are:

Traditional budget. A term applied to the budget of an organizational unit whose expenditures are based entirely, or primarily, on objects of expenditure. The end product in this approach is frequently referred to as the "character and object budget." The utility of this approach is that it is simple to comprehend. Its weakness is that in its concentration on the flow of inputs into units, it may underemphasize objectives to be accomplished.

Program budget. A type of budget in which expenditures are based primarily on program of work and, to a lesser degree, on character and object. A program budget does not emphasize the input of resources into units. It does attempt to measure the total cost of a specific function or activity that comprises a program, regardless of the number of units that are involved in carrying out the program. Advantages of a program budget are that it becomes easy to analyze and to see the emphasis being placed on a particular

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program regardless of the number of units affected. In focusing on programs rather than units, it is possible to fail to see clearly certain types of data needed to make judgments on specific operations.

Performance budget. A budget in which expenditures are based primarily upon measurable performance of activities and work progress. The performance budget seeks to present a clear relationship between input of resources and the output of service. To accomplish objectives, principal emphasis is placed on the measurement of quantitative data concerning units of work of a given function or activity. The development of a true performance budget requires a strong budget staff, participation at all levels, special accounting, and a considerable volume of processed statistical data. Because of staff development needs and monitoring requirements, this type of budgeting is not as widely used as the traditional budget approach.

Planning, Programming, Budgeting Systems approach (PPBS). PPBS applies the concepts of both program and performance budgeting to a job of identifying the fundamental objectives of a unit, generally an agency or subagency of government, and then selecting among alternative ways of attaining these objectives. This "trade-off" or proxy system must use as its basic analytical tool complete cost analysis of each objective and the benefits to be derived from the several alternatives. PPBS adds an additional dimension in that it is generally multi-year in perspective.

Formula budgeting. Line item budgeting is based upon quantitative models evaluating major operating programs and functions and setting numeric guidelines for fund allocations relative to pre-established standards of adequacy and accepted levels of attainment. As currently used, the formula may be applied to one library alone or to all comparable libraries or functions within a defined boundary.

Traditional program and performance budgeting have been with libraries for years and are not particularly of interest when examining trends toward newer approaches. Therefore, in this report they are recognized, but not analyzed. The concentration is on the more controversial PPBS and the various emerging formula approaches.

PLANNING, PROGRAMMING AND PERFORMANCE BUDGETING

History

Simply stated, PPBS consists of three elements: a) planning--establishing objectives, b) programming--combining activities and events to produce distinguishable resources, and 3) budgeting--allocating resources. When these three parts are connected for purposes of analysis, then PPB becomes a system. Such a system makes decisions between valid alternatives mandatory and, through cost analysis, constantly weighs objectives and continually reviews performance while moving toward set goals.

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In about ten years, roughly 1959-69, the techniques of PPBS developed and spread from The Rand Corporation to the Department of Defense, to federal civilian agencies, to states, cities and counties. The advocates of PPBS were so persuasive that in August of 1965, President Johnson directed that all major civilian agencies of the government move to install planning, programming and budgeting systems along the pattern of the Department of Defense model.

Partisans of PPBS were jubilant. In late 1965, the State-Local Finances Project of the George Washington University set about formulating work on PPBS in the state and local governments. An advisory board was set up of representatives of the national organizations of state and local governments and well-known authorities in the field. In 1966, dialogue was begun with state officials that would support PPBS efforts both at the state and national levels. During the year, a pilot project was developed for indicating the techniques of installing PPBS in five states, five cities and five counties. The demonstration, known as the 5-5-5 project was supported by the U.S. Bureau of the Budget. In 1967, letters of agreement for the year's demonstration were signed between the participating governments and George Washington University for the work to begin on a PPB system. For a more complete explanation of the activities of the State-Local Finances Project of the George Washington University, see Selma J. Mushkin's "PPBS in City, State, and County: An Overview."[2]

Thus energized moves toward PPBS spread rapidly. In a 1968 survey, 28 states reported beginning steps toward initiating the system. A similar survey was made of 509 cities with populations of 30,000 and over, and of 534 counties of 50,000 and over. About 50 local governments answered "yes" to the question, "Are you taking steps to implement PPB?", and 155 indicated they were considering implementation. Only 73 reported they had rejected the notion of installing a PPB system.[3] As it turned out later, the interesting reasons given were lack of staff with sufficient analytical capability and lack of authority to begin an official program budget. Almost as an afterthought in the same survey was the statement that it was difficult to judge from the questionnaire responses whether program and/or performance budgeting was being confused with a PPB system. There were only minor reservations however.

Doubts about the landslide movement to PPBS began to surface. As Marvin W. Peterson stated in the Journal of Higher Education:

> The high expectations of PPBS by its supporters in the federal government are exemplified by President Lyndon B. Johnson's statement in a message to Congress in 1967 that it 'brings to each

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[2]U. S. Congress, Joint Economic Committee, Subcommittee on Economy in Government, Innovations in Planning, Programming, and Budgeting in State and Local Governments, a compendium of papers, 91st Cong., 1st. sess., (Washington, D. C.: Government Printing Office, 1969), pp. 1-14.

[3]Selma J. Mushkin, "PPB in Cities," Public Administration Review, v. 29, no. 2, (March-April, 1969), pp. 167-178.

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> department and agency of the federal government the most advanced techniques of modern business management.' Yet a Bureau of the Budget report could label it 'a source of disagreement and confusion' and a noted political scientist has suggested that it was initiated 'in a burst of grandiose claims of "breakthroughs" and exaggerated application to irrelevant situations.'[4]

In a less passionate, more inclusive analytical and scholarly manner, a symposium dealing with PPBS in Public Administration Review made serious criticisms of the technique and was frequently critical of the advocates of PPBS for overselling it, or for using it in inappropriate settings.[5]

In any case, by 1970 the rush to PPBS seemed over. The mercurial rise in PPB fortunes was on the wane. Many states quietly abandoned PPB expectations or settled for some tinkering with form and technique. The slide from grace was so noticeable that Allen Schick of the Brookings Institution could state in 1972, "At the present time, only a handful of States have advanced from thinking about PPB to doing it, and few budgeters hold the high expectations that were commonplace just a couple of years ago."[6] The fact that PPB is not presently widespread is corroborated by the responses to the question posed by this writer in his travels. Not a single library reported being under a PPB system, although several reported dissatisfaction with present systems and said they were under some pressure for presentation of new budgets in a different format.

The life cycle of PPB in the states was short. The search and explanations of failure to implement PPB at the state level provides some insight into what the future will likely hold for large research libraries.

For most state governments, interest in a PPB system was not locally generated but was the direct result of federal impetus or bandwagon riding elected officials. The experience in DOD, the mandate by President Johnson, the State-Local Finances Project, and the Federal Technical Assistance which sent teams of experts to states to furnish on site guidance in developing PPB systems made it all too clear that the resources of the federal government were behind the system. Clearly it was not a product of the states themselves, and no matter what backing came from Washington, such backing could not compensate for lack of strong state support.

Frederick C. Mosher clearly and emphatically charges the advocates of PPBS of overselling, they "promised more than they could deliver, and they

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[4]Marvin W. Peterson, "The Potential Impact of PPBS on Colleges and Universities," Journal of Higher Education, v. 17, no. 1, (January, 1971), p. 2.

[5]"Planning-Programming-Budgeting System Reexamined: Development, Analysis, and Criticism," a symposium, Public Administration Review, v. 29, no. 2, (March-April, 1969), pp. 111-202.

[6]Allen Schick, "PPB: The View from the States," State Government, v. 45, no. 1, (Winter, 1972), p. 12.

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promised it faster than they could deliver it."[7] In addition, he feels that the Department of Defense model was inappropriate and misleading for state implementation. Cost effectiveness studies had after all been going on in the Department of Defense since World War II, and in The Rand Corporation for twenty years. While these agencies were thoroughly experienced in cost effectiveness techniques, no such expertise was to be found at the state level. In retrospect it does appear somewhat naive that the same techniques used almost exclusively in the budgeting of large weapons systems, where resources were practically unlimited and where decision was centralized, could be applied to other federal agencies and to state governments. There was no question about it, a model did exist. However, it was developed in such an artificial environment that its application at the state level, and more particularly to institutions of higher education, was questionable. As to application of a PPB system to large academic libraries, De Genaro has indicated that it is possible to design a model but that implementation of such a system is likely to be "faced with insurmountable problems."[8]

Advocates of a PPB system for any operational level whether it be state, university, or library quickly admit of the necessity for a considerable increase in staff to plan, identify, and specify objectives; to select on the basis of cost analyses the best ways to accomplish these objectives. These desirable goals notwithstanding, it seems improbable that at the university level, and therefore the library level, little if any additional staff will be forthcoming in the immediate future. The results of the field investigation, as indicated in questions 3, 10 and 19, show that libraries are not adequately staffed to carry out present management responsibilities much less take on the additional burden of responding to a new budget system. Of institutions queried, 70% thought that budget prospects would decline in the near future. An additional 25% felt they were in a "holding" situation. When one realizes that with today's inflationary trends a "holding" budget represents an actual reduction in funds available, then it is very apparent that roughly 95% of the sample felt that in effect they were facing staff reductions. When one realizes that in the initial stages of implementation present budget systems would have to be maintained alongside any new system, then it becomes clear that chances for a new system under present levels of support seem remote. This is not necessarily an indictment of PPB systems. It does indicate that any new system would be in for a rough time, a PPB system perhaps more so because to be successful the investment of scarce or non-existent staff must be great.

The lack of attention to budget matters, regardless of the mode, is one of the most serious omissions facing the administrators of large research

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[7]Frederick C. Mosher, "Limitations and Problems of PPBS in the States," Public Administration Review, (March-April, 1969), p. 160.

[8]Guy Joseph De Genaro, "A Planning-Programming-Budgeting System (PPBS) in Academic Libraries: Development of Objectives and Effectiveness Measures," PhD dissertation, (University of Florida, Gainesville, Florida, 1971), pp. 146.

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libraries today.[9] It is appalling how very little creative energy is allocated to this vital activity. Almost without exception the budget activity of large research libraries is carried out by the director of libraries and/or one of his immediate assistants. Budgets are immovable, executed against an impossible time frame and, for the most part, done in isolation from the rest of the academic community. Many administrators of large academic libraries feel they are "walled off" from many activities that may require library expenditures, that they are not consulted regarding the short-run and long-run impact of new programs on the demand for additional library services. Many believe, and this may be the most serious problem of all, that they as individuals are not placed high enough in the administrative hierarchy of the university to affect budget matters, nor are they members of policy making bodies which establish long-range academic policy. There are some exceptions but not many. In addition, it would appear that there is a serious communication problem between the library and higher management. The question of who does what to library budgets from their construction to their final allocations seems an especially serious one. The inability of a director of libraries to indicate what office or what agency made cuts in his budget places him in an intolerable position internally with his staff who are attempting to meet the increased demands for additional services both quantitatively and qualitatively, and externally on the part of the faculty whose clamor for resources is insatiable.

The rather lengthy list of technical problems including the obvious workload increase both quantitatively and qualitatively, the absolute necessity of being part of both long and short-range planning, the need to continue for some time side by side the old as well as the new system, the need for retraining and training of staff, the preparation of alternate cost studies, the need for new and more elaborate accounting systems, and the need for continuous program performance evaluations would seem in the face of the present economic climate to preclude the extension of PPBS, and to a large degree to limit its future.

No discussion of PPB as a management system can be considered complete without some exploration of its philosophical implications for libraries. Advocates of PPBS for libraries for the most part either ignore or pass lightly over the problems. Most current studies concerned with PPB systems and problems of implementation jump right into analytical cost studies without the setting of goals.[10] This can be extremely dangerous and could abort a

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[9] Problems in University Library Management, a study conducted by Booz, Allen & Hamilton, Inc. for the Association of Research Libraries and the American Council on Education, (Association of Research Libraries, Washington, D. C., 1970), p. 5.

[10] Three most recent contributions to cost benefit analyses for libraries which seem to improperly stress cost analysis to the detriment of the other factors are:

John E. Keller, "Program Budgeting and Cost Benefit Analysis in

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bedding system by failing to provide the necessary philosophical and planning.

Technical considerations aside, and in the light of the great difficulty inherent in any attempt to dislodge historical budget traditions, is it safe to assume that a PPB system is appropriate for an academic environment? More precisely, is a budgetary system, PPB or any other for that matter, which is hierarchially oriented viable in the present climate of higher education?

PPBS is definitely intellectually attractive. It provides goals, everything is considered arranged for and very neatly packaged. There is a Teutonic preciseness

PPBS Examined in State and University Organization

To answer a practical as well as academic question take a different tack and dissect the term PPBS to explore the components and their relationship to state, university and library administration. Notice the use of the term "administration" not "management"[11] which in itself is somewhat of a contradiction. This is not the place to debate semantics, but only let me note how infrequently we see the word management associated with state, university or library problems in current writing. Management does exist at all three levels but, conforming to some unwritten law, the terms are not associated. Now glance at any of the many writings about PPBS. Management is stressed as the overriding facet that holds the concept together. The system was designed for a strong management environment.

Program, as used in PPBS, has been discussed extensively, but we still are faced with problems of programs in insulation, programs in horizontal integration and programs in vertical integration. Can we develop the concept in an institution be it state, university or library and recognize the degree of integrity necessary to apply the concept to the complex? Even more fundamental, can we define programs at various levels so that there is a hierarchy

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Libraries," College and Research Libraries, v. 30, no. 2, (March, 1969), pp. 156-160.

Ferdinand F. Reindahler and Michael D. Cooper, "Cost Accounting and Analysis for University Libraries," College and Research Libraries, v. 32, no. 6, (November, 1971), pp. 449-464.

H. William Axford, "An Approach to Performance Budgeting at the Florida Atlantic University Library," College and Research Libraries, v. 32, no. 2, (March, 1971), pp. 87-104.

This latter article would lead one to believe that the item dealt with performance budgeting when in fact it is an excellent comparison of the Washington Formula and the modified Washington Formula as adopted by Florida Atlantic University.

[11] Peterson, op. cit., p. 1.

Professor Peterson asks the question, "Is PPBS a valuable new step for university management or just another technique, the current vogue, to be tried and discarded?" then frames his thesis on university management.

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which fosters commonality throughout the entire structure? Also can firm programs be defined in an environment where the major input and output are intangible? As pointed out by Frederick Mosher, the system has its slowest development in such fields as operations, maintenance and personnel where measurement is more difficult.[12]

Planning as defined in most of the literature on PPBS is a one dimension term having, by omission, no provision for time nor sphere of influence. Our readings start us at point one in time where we begin the process of identifying the program and planning its course by evaluating alternatives for attaining our stated objectives. We haven't discussed the one program within a family of programs, nor have we discussed the development of a new program within an already established family of programs. (Here you must realize we are talking about material written for the journals from which we get others' views and form our opinion--not the Department of Defense Manual or other training aids created for and within the system.) This is pointed out not as a criticism of PPBS, but as a caution to any of us who are inclined to draw judgments solely from our trade journals. There are techniques and directions for planning and for replanning when events occur either internally or externally to affect the original program.

Budgeting is the catchword of the titled system, because it is the word that seems to reach all readers easily. Each of us is faced with budget preparation regardless of how we do it. To most of us it means that many months before the period under consideration we sit with our staff to determine what we think we need to do our job as we see it. This is submitted higher in the organization and is combined with other departments that make up the university. Later, much later and often after the fiscal period begins, we learn how much money we will have, and then we adjust our grand plans accordingly. The missing element becomes obvious. What do we do now? Commercial organizations call it controllership, but the word cannot be found in the writings about PPBS, nor unfortunately in the operating vocabulary of libraries. Controllership leads us to thinking about such functions as feedback, review, reporting relationships, accountability and redirection. Controllership also forces us to recognize a rigid, or at least formalized, review and here is the key--control mechanism. What we are beginning to develop is an organizational structure necessary to administer to the demands of a pyramid of accounting, performance and planning control.[13] Possibly we have added new dimensions to research into the concept. If so, we are ready to plant the system in a state, university and library environment and then ask a new series of questions about the problems of applying PPB in these institutions.

First, the problems of PPB in a state government structure have been analyzed very well by such authorities as Frederick Mosher and Allen Schick and others. In their writings they point out that the problems are not insurmountable, but that any system such as PPB has an extremely difficult introduction, basically because it opposes the politically popular concepts of democratic government. Under a PPB program there is a main trunk of

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[12]Mosher, op. cit., p. 1.

[13]Schick, op. cit., p. 14.

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authority running through the organization. The multi-agency and unofficial input to decision making, objective definition and performance monitoring creates a condition that is alien to unit control. This same condition also often elongates reaction time to the point where any benefit that could be derived from the PPB watchdog functions is ineffectual. Even in the more tangible programs such as highway construction, where the task is assigned normally to one division of the state government, the multi-agency input can expand the program to include all transportation, the linking of city, rural and national networks, and inevitably to the far-reaching ecological problems. The program originally defined to construct a road has been expanded to elements beyond the sphere of any one controlling unit. Thus a hierarchy of programs has developed, and an equally complex PPB structure is organized to monitor the various levels. A decision must be reached at some very high level as to who is the controlling unit, at what level cost and performance gathering will be maintained, and what reaction will be instigated if there are undesirable deviations within sub-programs or sub, sub-programs.

The highway/transportation case is possibly one of the least complicated programs that could be put under PPB management. Take a few minutes to examine a different type of program such as welfare or public schools. In these cases not only do we have many inputs, but we face multiple agencies responsible for the administration of the overall program. Can we, or do we set up a super-agency that will oversee the entire effort? Even if we were able to do so, could a viable set of objectives and criteria be established which would measure the program in a manner that could be quantified for evaluation and reasonably quick corrective action should it become desirable? A strong central management/control organization needed for PPBS is in direct opposition to the bureaucratic defensiveness and localized control that political practitioners protect so religiously.

Summarizing the problems that beset PPBS in a state government, and possibly the reasons why many of the states looked but did not buy, and why the concept had a growing number of critics in the federal government when it was applied outside the Defense Department, we can enumerate the most salient as Mr. Hosher has done very well in detail:

1. The prime prerequisite for effective PPBS administration is a clearly defined, specific set of objectives.

   a. In a democratic state who should determine these objectives?
   b. How can values be defined in a political environment where the rationality is diverse--not simply economic?
   c. Most government undertakings, as shown above, have multiplicity of objectives and the weighing of one against the rest is a monumental task--particularly when the objectives are dictated by several agencies and may indeed be incompatible to a degree.

2. The emphasis is on the ability to attach quantitative values to input and output and eventually attach a dollar value to each. This leads to the problems that arise when political organizations approach the concept that if you can't count it, it doesn't count.

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3. PPB, by its very nature, tends to shuffle the organization so that eventually one area becomes strong because of its knowledge and control position. This is frightening in a structure which functions because of a balance of power that has built up over the years.

4. PPB creates a conflict between the elected government bodies and the bureaucracy.

The summation of the conflict of PPBS in a political structure, and the overruling reason why the future of PPBS is generally bleak in state governments, is the obnoxious argument of the public interest versus an aggregate of special interests. Both hypotheses depend finally upon an advocate's vigorous assertion[15]--hardly an environment for the healthy growth of strong central management.

Moving one step closer to the large academic library and evaluating the potential of PPBS in universities and colleges, we see a whole new set of problems, conditions and arguments. The trade journals have covered the subject thoroughly and with a high degree of analytical skill displayed by both proponents and opponents of the system. Searching the literature for the past several years, one is impressed by the arguments and justification presented for and against PPB in higher education. But regardless of the approach advocated, there appears to be one underlying base for the author's position, and this is found in virtually all writings. The core statement is not advocating or discrediting PPB but stressing the fact that present university and college management is not adequate in the present socio-economic environment. This is not stated, or even hinted, as an indictment of administrators, but a recognition that there are management tools not being employed by those who are officially charged with running institutions of higher learning. The most pointed comment along this theme is taken from the introduction to Marvin Peterson's paper, previously referred to, where he begins his arguments with:

> In an article in the Journal a few years ago, William Moran argued persuasively for the need to develop 'The Instrumentation of Universities'--to create 'precise artificial measuring devices' which would replace 'the clutter of information' with more reliable and simpler information that would permit 'freer exercise of judgment.'[16] He went on to point out that changes in instrumentation would entail considerable change within the university itself--

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[14]Mosher, op. cit., p. 162.

[15]R. W. Behan, "The PPBS Controversy: A Conflict of Ideologies," Midwest Review of Public Administration, vol. 4, no. 1, (February, 1970), pp. 3-16.

[16]William Moran, "The Instrumentation of Universities," Journal of Higher Education, vol. 38, (April, 1967), pp. 190-196.

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> a point which seems all too easily overlooked in our desire to institute new managerial techniques in universities. There is a tendency to view new techniques only in terms of their internal rationality (does it seem to be a mechanism that accomplishes what its designers intended?) and their cost (can we afford it?). A case in point is the recent trend to introduce Program-Planning-Budgeting Systems.[17]

Here he recognizes Mr. Moran's insight to university administration. He goes on to quote other well-known authorities such as E. J. Boffording, Sidney Dickson and Frank Dilley, then ends by saying, "The statements deploring the inadequacy of university planning, management, and operational efficiency are multitudinous."[18] Edward Katzenbach also alludes to the key issue when he states:

> It should be emphasized, however, that utilization of PPBS does not make the administrator's job an easier one. Indeed, by forcing him to make clear-cut decisions from a large array of well-defined objectives, it challenges his ability as a decision maker.[19]

But again, the real problems may not be in the hinted lack of management, but in the lack of manageable elements. James Farmer neatly sums up the problem when he points out:

> There has been no fully satisfactory definition of the output of higher education. In institutions there is no single organizational unit which produces a unique output--a graduate is the product of many different services. There are no accepted production functions of higher education, and because of the joint input and output of programs like research and instruction, production functions for higher education will be difficult to identify and quantify.[20]

Looking at the overall picture of what makes up the raw material for PPBS, or any management system, we find the university hard put for clear

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[17]Peterson, op. cit., p. 1.

[18]Peterson, op. cit., p. 7.

[19]Edward L. Katzenbach, Planning Programming Budgeting Systems: PPBS & Education. (New England School Development Council, Cambridge Massachusetts: Department of Publications, the New England Education Data Systems, 1968), p. 5.

[20]James Farmer, Why Planning, Programming, Budgeting Systems for Higher Education? (No. 1 in a series of monographs prepared by Management Information Systems Program, Boulder, Colorado: Western Interstate Commission for Higher Education, 1970), p. 1.

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definitions. The primary concern for firm PPBS is a set of stated, agreed upon, measurable objectives. Immediately the system runs into a major snag, because we find that there is no general argument as to the purpose, thus objectives, of the higher education system. The university administration may have a clear picture of what is foremost in buildings, number of students, number of graduates, number of academic programs, etc.; however, they are not the only input to objectives in a large state academic institution. Externally, such agencies as the state legislature have some firm convictions on the subject, such as the current disenchantment with research, the desirability to have more student exposure to higher ranking academic staff, and the urgency to reduce costs in institutions in general. The board of higher education also has a set of plans which are possibly aimed at geographical distribution of academic endeavor, allocating funds and other resources to junior colleges or a division of degrees between various universities within the state to prevent overlapping. Thus the public groups such as industrial councils, professional associations, agricultural agencies and others all have individual demands they attempt to feed into the hopper. The question then is who and at what level are the objectives established? And if they can be, how are they quantified for evaluation? But the input is still not all in. Internally, there are strong-willed groups that also voice opinions as to the objectives of the university. These may not be completely compatible with either the administration's or the external objectives.

A set of programs is necessary to fulfill the objectives. Each endeavor of the university must be bundled into one of a number of programs dedicated to moving the system toward its long-range objectives. These are possibly more critical than the long-range objectives, because they are easier to define, that easier to make judgments on. All the agencies and voices heard in the objective phase are again contributing to the programs. The legislators and other external groups can be most vocal in this instance, for they can see the expenditures and potential results much more clearly. Any controversy over goals raises dissenters and advocates, voices loud and clear.

Alternatives to the programs must be exhibited. I doubt if any program is ever set up under any budgeting system without some analysis of the alternatives, but in the PPB framework they have to be thoroughly explored and portrayed for comparison by those who wish to act as pseudo-governors. One of the significant problems here is the ability, or lack of it, to isolate programs and alternatives to a point where the judgments can be based upon common quantitative criteria. Most frequently the program in question and the alternatives cannot stand alone but are affected by, or affect other programs in the overall university scheme. Each alternate has a different pattern of impact which makes selection by administrators difficult, and fair evaluations by other contributing organizations almost impossible.

Input is possibly the easiest element of a PPB system to identify and evaluate. It is the mix of manpower, facilities and materials converted to units then dollars necessary to fulfill the programs. There isn't too much conflict in this area except when converted to dollars all the external agencies feel a strong sense of responsibility to their constituents to protect their respective interests. The conflict comes when the total available money resources do not cover all the programs. Prioritizing and "bumping"

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occur because of the easy handle on each program.

The most difficult of the 22 facets in university management, according to most of the writers, is the placing of quantitative values on output. The two major contributions, or output, of a university are students who leave the school and research. Notice I did not restrict the student output to those with degrees because to accept only the degree holders as finished products, as some writers have done, would be tantamount to classifying those who leave before earning their final degrees as scrap of the university production process. That is neither realistic nor honest to school planners and students.

The number of student end products can be counted and predicted with some accuracy, but to evaluate a program or objective in a hard, cold, cost effectiveness (thanks to DOD terminology) formula is something quite different. So that we can properly use PPB in the manner it was designed, we must assume some value to the end product--but what?

Research, the other major component of the university end product, seems at first glance to be easier to put a price on, but is it? Value leads one to associate the item priced directly with the gross national product, or at least with a salable commodity or increase in utility that can be turned into money. Applied research, even in the sciences and technologies, may be far removed from a value added figure and, indeed, may never produce a hard product. The economists and cost analysts have some strong opinions on the subject even in industry where the cost of research can be written off as a business expense. They have even more to say about research in such fields as literature or history. Legislators find it no less difficult and they have the purse strings.

Other elements of PPB which are often omitted in writings are progression evaluation, feed back and corrective action. These were discussed earlier and appear to be no different in a university environment than in any other. If the itemized elements of PPBS can be resolved to the satisfaction of those who promote the system, the follow-on subjects can also be resolved. It appears to be a difficult situation though, and very possibly the university is not the place for PPB, as more and more authors are stating. This writer feels that the university, given a chance, can manage itself but that PPBS may not be the most attractive technique. The lack of firm definitions and organizational structure are serious enough, and cost hasn't even been mentioned. There must be a significant change in university organization to cope with the analyst and control mechanisms required for PPBS. To illustrate the point, consider the experience of a top industrial executive who was director of a large (for that time) defense contract and found after a period of time that his schedules were sliding and his costs were soaring. His internal analysts, schedulers, cost accountants and planning engineers spent hundreds of hours attempting to discover the problems and maintain their own day-to-day tasks. All of these people were in his employ and were charged to his organization--and to the end product. In desperation, he finally called in an analyst from outside his organization who discovered a cost factor that no one had seen--for every three employees performing direct or indirect tasks to produce the product, there was one analyst or scheduler. Can a university afford to expend one dollar for objective and program control for every three dollars spent producing the end products? What would our legislators, private organizations, faculty and student bodies say to such a

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structure? Granting that it may not take a 3:1 ratio, there would still be a significant organizational expense. There must be a better way.

PPBS Examined in Academic Library Environment

Within a state's institutions of higher learning are the academic libraries, the high cost organizational units which exist to support the research and academic endeavors of the school. These are often the most conspicuous items of the university line item budget, because they represent one of the largest, if not the largest, single unit in the listing of academic departments. Yet in spite of this prominent, possibly infamous position they are most often not the masters of their own destiny. They are not a program unto themselves, but an auxiliary, indirect contributor to the output of the main, "line" if you will, producing departments--the teaching and research groups. Even more astonishing, as seen in the tally of questions relating to the position of the library and the librarian to the policy making bodies of the campus, they are often treated as a large, expensive child--they receive their allowance and speak their piece only when the elders give them permission. But this is not the place to preach for the desirable position on the campus decision making boards. The status of the library is pointed out only to illustrate the environment in which PPBS is placed when applying it to library operations.

Going back to the elements of PPB, the very first hurdle to face is that which heads the list of requisites--objectives. Deferring divisional objectives within the library until later, concentrate first on the goals of the library-as-a-whole. What are they? Without relying on a set of immeasurable, undefinable platitudes, can firm long-range targets be developed? With the help of the university governing body it is possible. For example, let us state one objective of within five years becoming the tenth (random figure) ranking library in the nation according to standards we establish ourselves by comparing our library with others submitting vital statistics to data gathering agencies such as the Association of Research Libraries. This is a legitimate PPB objective. It is long-range, it is measurable, the starting point can be defined, there are alternate routes to the goal, progress can be reported, and it has a degree of salability which may excite legislators into providing the necessary funds. Without stopping to ask how many librarians make such statements, and why don't they, let's admit to the fact that we are off to a good start and that so far PPBS appears to be a very comfortable management technique. Exuberant enthusiasm was exhibited in a speech by Willard Fazar before the Department of Library Science at Wayne State.[21] In the spirit generated, other long-range objectives are established. And now the problems begin to surface.

The next phase in establishing PPB (the one deferred above for clarity only) is to set contributing objectives within the library. Some will be divisional and some will be inter-divisional, but they must contribute either

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[21]Willard Fazar, "The Importance of PPB to Libraries" (speech presented to the Institute on PPBS for Libraries, Department of Library Science, Wayne State University, Detroit, Michigan, September 23, 1968), pp. 1-25. (Mimeographed.)

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directly or indirectly to the corporate objectives of the library. Inter-divisional objectives are mentioned here only because some writings have restricted the development of internal objectives to conform strictly to organizational lines. Inter-relationship of library functions to each other often forces us to think not on organizational lines but to include the entire function cycle. For example, the monograph intake cycle includes public service, acquisitions, cataloging, accounting, and then public service again. In this phase, the ability to measure our objective in quantitative terms becomes more difficult. Then we ask ourselves if quantitative measurement is really sufficient. What about quality? Can we count, for instance, the number of reference questions answered and say we are progressing or regressing? Assuming we set an objective of doubling our reference responses the count may be proper, but the objective is not within the general definition of good library service. On the other hand, if we establish a "professional" objective of providing competent reference service at all levels with a high degree of patron satisfaction, we are in trouble. Notice there are no quantifiers in the objective. Neither can we, without a great deal of effort, establish quantities for measurement. Edward Howard defines other measuring problems equally significant in the introductory paragraph of his article in American Libraries.[22]

When exhausting the question measuring quantitative evaluation, dollar value, and other rigid gauges of target and progress, we face the topics of organization and operational cost. Earlier we referred to controllership. The subject becomes prominent again, but now it is in the library. First, there is the cost of controllership, and supplemental to it the cost of record gathering, keeping, and analysis. To be truly effective the library must keep performance data that can be analyzed, compared to quantified objectives and reported to management--not impossible, but expensive. I say "expensive" because it is a cost element we have not encumbered in the past. It may prove to be quite inexpensive if we employ the technique and listen to the hints (before they become alarms) and take the corrective action indicated.

PPB is a management system. I have refrained from stating a position for or against the system applied to libraries but have attempted to show some of the more significant problems it (and librarians) face when the concept is adopted by an academic library. It requires many changes in library management attitudes--but that may be good for the profession as pointed out by the Booz, Allen & Hamilton study of 1970.[23]

Summary

To recap the potential of PPBS in the academic library environment, we can generalize by stating that the consensus of opinion among those interviewed was essentially negative and pessimistic. These opinions were not

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[22]Edward N. Howard, "Toward PPBS in the Public Library," American Libraries, (April, 1971), p. 386.

[23]Problems in University Library Management, a study conducted by Booz, Allen & Hamilton, Inc. for the Association of Research Libraries and the American Council on Education, (Association of Research Libraries, Washington, D. C., 1970), pp. 1-63.

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without recognition of the theoretical benefits to be derived from the system, because everyone is aware that PPB is intellectually exciting and potentially possible. The opinions were based upon practical realism and appraisal of the problems that beset the system in the environment to which it would be exposed. Basically, the difficulties stem from the fact that a large academic library is not a free standing structure but is dependent on a university or state parent for operational guidelines. The new staffing requirements are foreign to libraries. A foreign profession is introduced into a closely knit family that has been universally librarian. This, in many cases, could be likened unto an unwanted in-law. Again, within the library organization a strong management approach has to be applied to make the PPB effective. In the participatory management movement among libraries, this creates a serious functional and morale problem, and looking at the library and its relationship to its parent body, PPB is facing a strong trend toward decentralized decision making and budget planning. Committees and departments of all levels are active in the process.

Thus the theory may be surpressed by the weight of reality--possibly to the disadvantage of the academic library.

FORMULA BUDGETING

Formula budgeting appears to be the coming trend in academic libraries. The evidence gathered from the institutions surveyed and discussions with other library administrators during the past two years indicates that academic libraries are moving away from traditional budgeting and toward formula budgeting, rather than program or PPB. Of the thirteen institutions surveyed, four definitely indicated being in a formula situation. In addition, since the inception of formula budgeting in the State of Washington, the author has received many requests from other universities for information concerning the implementation of the formula budgeting system. This movement from traditional budgeting is fostered by the fact that libraries have not been able to present their case adequately under the old method during the past few years. The governing bodies have come to question the relatively large budget requests of libraries and are demanding more proof of need, or justification, before they release the tax revenue.

The reasons for formula rather than program or PPB are expressed in various terms, but they all fall into one or more of the following classes:

1. Formula is mechanical and therefore easier to prepare

2. Because of its application to all institutions in the political jurisdiction, there appears to be justification for monies requested.

3. The governing bodies have a sense of equity because each institution in the system is measured against the same criteria.

4. Fewer budgeting and planning skills are required to prepare and administer a formula budget.

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As shown below, formula budgeting varies widely in approach and elements covered. This may be due to the newness of application or evolution from the early Clapp-Jordan thesis. To illustrate some of the techniques, eight examples were selected for graphic comparison. These are not the only formula plans in use but possibly the most familiar. Others such as the "arbitrary percentage approach" employed by some of the states in the South and Southwest and previously analyzed by Arthur McAnelly[24] have been omitted.

TYPES OF FORMULA BUDGETING

Formula	Formula Generates							Comments
	TP No.	Staff Pos. Sal.	Staff Pos. Lab.	Staff Pos. Staff	Resources Units	Resources Dollars	Money	
Clapp-Jordan					x			
Calif. (Univ.)	x		x					
Washington	x	x	x	x	x	x		Money generation not described
Florida	x	x	x	x	x	x		Money generation not described
Calif. (St. Coll.)	x		x		x			Not described--indirect computation
State Univ. of New York (SUNY)	x		x					
Ontario							x	
Texas							x	

The Washington State Formula,[25] the most comprehensive academic library budget formula, has two primary antecedents. One is the Clapp-Jordan theoretical model used to determine the adequacy of library collections in terms of resources[26] and the other a proposed formula to provide adequate staffing levels

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[24]Arthur H. McAnelly, "Budgets by Formula," Library Quarterly, vol. 33, (1963), pp. 159-171.

[25]Washington (State) Office of Interinstitutional Business Studies, A Model Budget Analysis System for Program 05 Libraries, (Olympia, Washington, 1970), pp. 1-16.

[26]Vernon W. Clapp and Robert T. Jordan, "Qualitative Criteria for Adequacy of Academic Library Collections," College and Research Libraries, vol. 25, no. 5, (September, 1965), pp. 371-380.

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for the University of California System.[27] It is interesting to note that a formula was never instituted for the California University System. On the otherhand, a formula was instituted for the California State College System.

Merging of the elements in the Clapp-Jordan model and the proposed California staffing formula produces six variables used to compute the number of library resources required to provide minimally adequate collections. First, a basic or opening day collection is established at 85,000.[28] The second variable is an allowance of 100 resource units per each full-time equivalent faculty member. The third variable is an allowance of 15 units per full-time equivalent student. This combines the Clapp-Jordan or day allowance of 12 units per FTE student and 12 volumes per honors student. The additional entitlement is based on providing modest duplication as the size of the student body increases. The fourth and fifth variables are allowances for work at the masters level. When a masters degree is the terminal degree in a discipline, 6100 units constitute formula entitlement. When a doctorate is offered on top of an existing masters, then formula entitlement is set at 3050 units. The final variable is an allowance of 24,000 volumes per doctoral field. Clapp and Jordan indicate this is a minimal allocation and will not provide for any retrospective purchases. A graphic comparison of four collection adequacy formulas is given below:

VOLUME ENTITLEMENT

	Clapp-Jordan	Wash.	Florida	Calif. St
Basic or "opening day" collection	50,750	85,000	85,000	75,000
Per FTE faculty	100	100	100	
Per FTE student	12	15	15	*
Honors undergraduate	12	0	0	0
Undergraduate major in subject field	335	0	0	0
Per masters field (terminal)	3,050	6,100	7,500	3,000
Per masters field (with PhD)	0	3,050	**	0
Per PhD	24,000	24,500	15,000	5,000

*California State Formula provides for increasing of collection for each 200 students over a floor of 600 by 10,000 volumes.

**Florida eliminated the recommended resources for non-terminal masters programs. It was thought that where the doctorate was the terminal degree, the resources provided could support the lower level program.

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[27]California University, Office of the Vice President for Finance, Library Workload Measures. (Berkeley, California, 1963), pp. 1-20.

[28]The Clapp-Jordan model recognizes only printed materials. The Washington Formula defines "the library unit" to include microforms, one roll of microfilm or eight microcards or eight microfiche equalling one volume.

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Under the Washington formula when the resource entitlement has been established, it is then necessary to establish the number of technical processes staff needed to process and to make available the number of units acquired. This is seen as a function of the number of units acquired, the number of units to be deleted through the weeding process,[29] and the current size of the library collection. The computational process to arrive at formula entitlement for technical processes is as follows:

1. Compute weighted units processed (Z).

   Where (Z) = [Collection size at end of current year + (units added and deleted during the year)] divided by 1,000,000.

2. Compute weighted units processed per FTE (WUP).
   WUP = a + b (Z)

   When Z = 1 to 14,999; a = 67, and b = .01514
   Z = 15,000 to 41,199; a = 194, and b = .00564
   Z = 42,000 to 300,000; a = 322, and b = .00360

   In this formula Z is defined as the variable (number of weighted units processed). When Z varies between certain defined limits, then different constants and different factors (a and b) are applied. Differences in constants and factors are an expression of a basic premise in the Washington formula in that it becomes progressively more difficult to process material into the collection as the size of the collection grows and that economies of scale will accrue as the number of units processed increases.

3. Compute FTE technical processes staff (TP) as follows:

   TP = Z + WUP

The above computations are based on the California data, and that data is supplemented by a suitable addition for the processing of microforms. The approach assumes that it becomes more difficult to process materials into a collection as its size increases, but that this added burden would be offset by economies of scale.

In the Washington formula, public services staffing is basically a function of the number and the course level of students. Weights are

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[29] Anticipated deletions from the collection were to be based on the percentage ratio of deletions to total holdings experienced in the most recent actual year up to a maximum of three percent per year.

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assigned and computed as follows:

1. Compute the total weighted enrollment (E) using the following values:

100/200 level students at	1.00
300/400 level students at	1.80
500 level students at	4.30
600/700 level students at	6.00
Registered outside users at	1.00[30]

2. Compute FTE public services staff (PS).

Then: PS = E divided by 220.

In the computation for public service staffing the Washington formula and the California data differ conceptually in two respects: a) the California proposal assigns weights according to the level of the students themselves, while the Washington formula assigns weights according to the level of the courses taken; b) the California proposal provides a separate allowance for faculty and academic staff, while the Washington formula does not.[31]

The Florida formula is a hybrid version of the Washington formula.[32] Modifications were introduced in order to make budget requests more palatable to the legislature, since a direct application of the Washington formula to the largest Florida libraries indicated an adequacy level of approximately 50 percent. Basic changes were made in the formula computation for library resources. The allowance for materials in the masters programs where the doctorate was the terminal degree were completely eliminated, the rationale being that the allocation to the doctoral program should be ample to support all lower level programs. The allocation to masters programs where there was no doctorate was increased from 6000 to 7500 volumes. The thinking was that library resources would be strengthened in advance of the inevitable doctors program. The blanket allocation to doctoral programs was reduced from 24,000 volumes to 15,000 volumes. This was due in part to increases allowed in the masters programs and in

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[30]Registered outside users are defined as "persons not connected with the institution who make regular or sufficient use of the collection so as to require registration or issuance of a borrower's card."

[31]Faculty are excluded on the basis that faculty costs being a highly variable, high cost area which may or may not require additional library resources. This omission is serious and will be challenged in the section on criticisms.

[32]H. William Axford, "An Approach to Performance Budgeting at the Florida Atlantic University Library," College and Research Libraries, vol. 32, no. 2, (March, 1971), pp. 98-104.

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part to arbitrary reductions. Technical service staffing levels are identical except that Florida makes no provision for weeding the collection. The first edition of the Washington formula also made no provision for weeding.

In the Florida approach public service staff weightings are greatly reduced, primarily to reflect the faculty student ratios utilized by Florida. Weightings employed by Florida are: 300/400 level FTE students weighted at 1.76; 500 level FTE students at 2.05; and 600/700 level FTE students at 4.76. In addition, the allowance for outside borrowers has been eliminated and the weighted user factor has been increased to 300. These actions combine to produce a more conservative formula.

The California State College formula[33] has an entirely different basis than Washington. Resource requirements are based on U. S. Office of Education standards which are as follows:

> "For colleges enrolling up to 600 full-time students--50,000 volumes, this figure to be increased by 10,000 volumes for each additional 200 full-time students enrolled; and to institutions offering the master's degree but not a doctoral degree, 3,000 additional volumes for each subject field in which students were enrolled during the year of application for Title II funds."

To meet certain local conditions the criteria were modified as follows. The allowance for the opening day collection was increased to 75,000. This was in line with the allocations for new campuses in the University of California System. In addition, there was an allocation of 5,000 volumes made to each joint doctoral program. Under the California State College formula the resources of nearby academic institutions were to be utilized. For those institutions in the college system located within 25 miles of another academic library with a collection size of over 325,000 volumes, the minimum collection size was reduced by 5 percent. Technical services staff is based on current operating activities. Simply stated, the formula provides one FTE staff per each 950 volumes of library resources that are to be processed.

Public service staffing is somewhat more sophisticated. It consists of: staffing for the number of required manned stations; acknowledgement that graduate students require a higher level of library service than undergraduates; and finally, the formula attempts to be sensitive to changes in workload. In essence, three separate formulas are employed to compute the required public services staff. The first formula is intended to provide staff for those operations dealing with the circulation of library

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[33]California (State) State Colleges, Office of the Chancellor, Division of Academic Planning, Report on the Development of the California State College Libraries, (Los Angeles, California, 1970).

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materials (number of circulation stations) and is as follows:

$P_1 = (\frac{a}{b} \times \frac{c}{d}) \pm e$ where

P_1 = number of public service area positions authorized,

a = average weekly hours projected to be devoted to all circulation activities related to charged materials functions by professionals, non-professionals, and student assistants;

b = 40 hours per week;

c = book, serial and bound periodical circulation for one fiscal year as a percentage of a college's total countable volumes held on June 30 of the same fiscal year;

d = systemwide percentage average of c; however, should a library's circulation percentage (c) fall below the systemwide circulation percentage average (d), then the number of P_1 positions would be determined by dividing average weekly hours charged to circulation by the 40 hours, in which case: $P_1 = \frac{a}{b}$.

$\pm e$ = one (1) position for the projected increase or decrease of each 12,000 volumes charged or 70,000 volumes received of uncharged materials.

Note: In this formula $\frac{a}{b} \times \frac{c}{d}$ provides the basic number of public service area positions.

The second and third portions of the formula establish staff for the reference functions of the library as follows:

$P_2 = \frac{\text{FTE faculty} + \text{FTE students}}{750}$

$P_3 = \frac{\text{Graduate students enrolled}}{500}$

Unlike the Washington and Florida formulas, the California State College formula has an additional allowance for managerial and administrative positions.[34] These include the Director of Libraries, his assistant(s),

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[34]The Washington formula pro-rates a share of administrative costs to

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his secretarial staff, s[illegible]ns analysts and coll[illegible] officer. The allocation[illegible]re based on the size of [illegible] as follows:

3 administrative positions for colleges belo[illegible] students

4 administrative positions for colleges be[illegible] 10,000 FTE students

5 administrative positions for colleges wi[illegible] enrollment in excess of 10,000.

To the writer's knowledge, the only other [illegible]ed for administrative and managerial staff is the Stat[illegible] York formula which produces only a recommended st[illegible] basis of this formula was the operational data co[illegible] libraries. From detailed surveys, standard times [illegible] library functions were compared to five basic [illegible] These basic characteristics of libraries are: a) [illegible] tions, c) FTE users, d) headcount students, and [illegible] Three classes of institutions were identified: A[illegible] i- cal, Liberal Arts Colleges and University Centers. [illegible] e classes of institutions had different standard time[illegible] ed various library functions.

The technical services staffing level was [illegible] a series of weighted standard times to the size of [illegible] certain date and from the acquisitions rate. For t[illegible] ons the technical services staff requirement (TS) is [illegible]

$$(TS) = \frac{An + Bb}{90{,}000 \text{ minutes}}$$

Where A = holdings and a = 2.437 (minut[illegible] searching, ordering, and rece[illegible] and classifying.]

B = acquisitions and b = 142.258 ([illegible] inventory, card filing, binding [illegible]

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[34]technical processes and public services [illegible] effect of taking these costs out of the hides of [illegible]

[35]New York (State) State University, Divisio[illegible] Library Manpower: A Preliminary Study of Essenti[illegible]ing to Library Staffing Patterns, (Albany, New York, [illegible] study is being widely referred to as the Fairhol[illegible]

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The New York State University public services (PS) staffing formula is as follows:

$$(PS) = \frac{Cc + Dd + Ee + Y}{96{,}000 \text{ minutes}}$$

Where C = FTE users and c = 165.167 [for answering reference questions and maintaining reserve collections.]

D = student headcount and d = 207.517 [for circulation of library materials.]

E = FTE faculty and staff and e = 174.174 [for preparing abstracts and bibliographies and interlibrary loan.]

$$Y = \frac{06 \times .60 \text{ of lower division students}}{600}$$

In the above formula administrative support staff, staff time for professional meetings, committee assignments, personnel and budget activities and other administrative tasks is fixed as a percentage of the formula allocation of public services and technical processes staff. For the University Centers it is 10 percent.

There are two formulas which provide an amount of money to the library with the division of these funds left to the librarian. No quantitative standards are used to ascertain whether collections and staff are adequate.

Texas allocates funds according to the number of semester credit hours with the base being the first fiscal year of the current biennium.[36] This number of semester credit hours is then multiplied by various rates, specified below, to determine the dollar request for the Library. Recommended amounts per semester credit hour for fiscal year 1972 are:

Undergraduate	$ 1.95
Masters and special professional	3.90
Law	10.30
Doctoral	16.69

The Ontario formula provides an amount of money to the institutions as a whole with this amount being divided by the institutions' administration.[37] This funding is determined by the number of income units--the number

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[36] Texas (State) College and University Libraries, An Economic Analysis of the Formula System of Financing Public Higher Education in Texas, vol. 2, a report submitted to the Coordinating Board, W. J. Thomas, project coordinator, (Midwestern University, Wichita Falls, 1979).

[37] Ontario (Canada), A Formula for Operating Grants to Provincially Assisted Universities in Ontario, (Toronto, Ontario, 1968).

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of weighted FTE students. Weightings are based not only on instruction level, but the areas of instruction themselves. Briefly, the weightings are as follows:

Undergraduate

Category 1	[pre-majors, all general courses]	Weight 1.0
Category 2	[business, law, fine and allied arts]	1.5
Category 3	[nursing, engineering, pharmacy, forestry, music, hygiene and public health]	2.0
Category 4	[medicine, dentistry, veterinary medicine]	3.0

Graduate

Category 5	[masters programs in business, social work, public administration, journalism]	2.0
Category 6	[masters programs in humanities, social sciences, law and library science]	3.0
Category 7	[masters programs in science and technology]	4.0
Category 8	[doctoral programs]	6.0

Summary

The evidence presented above indicates there may be several approaches to formula budgeting for academic libraries. It is also apparent that the complexity of approach may range from two or three variables to one of more comprehensive inputs requiring sophisticated mathematical computations.

To the extent that formulas are based largely on historical conditions, they are static rather than dynamic and are, therefore, vulnerable to the charge of unreality.

Some of the formulas examined, particularly that of Washington State, seem oversensitive to a change in the variables. The heavy weight given to graduate students and faculty are great when enrollment is increasing and faculty is expanding, but during periods of retrenchment these same factors seem to over-penalize the library in terms of real need for the support of academic programs. Universities traditionally do not cut out whole programs or departments. Instead there is a whittling away process that may reduce the actual number of faculty and thus the formula base, but result in very little reduction in need for resources. The tenured faculty are still around, and a reduction in faculty and/or support staff may indeed impose a heavier burden on the library.

For the most part formula budgeting is being imposed on libraries from the outside. To the extent that this imposition is politically motivated, it can be harmful. Under this condition the formula can become a way

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to allocate scarce resources among competing units and, most unfortunately, might be the tool for punitive but impersonal action on the part of a legislative body. Intelligent formula development demands the recognition of the differences in academic profiles of the institutions within the system. If this is not done, then much time and energy can be spent in jockeying for position in quantitative terms, developing areas of non-comparability or working up budget presentations outside the formula--a game of upmanship for survival.

Whatever the criticisms that may be directed toward formula budgeting generally, and more specific ones appear in Appendix A, the formula approach has the advantage of providing some quantitative standards in an area in which it is practically impossible to support budget needs in other than qualitative terms. The foundation or logic in any of the formula systems may be obscure, but if the formula serves the library's needs--that of generating additional financial support--then there is no question that it is in the best interest of the library to support such a system.

Changes in the methods and the degree of financing higher eduction are in the air. It appears that PPB, as desirable as it might be, is not on the immediate horizon. To the extent that formula budgeting can be considered an intermediate phase in the development of better methodology, librarians should become more knowledgeable concerning budget matters and should aggressively seek out ways of becoming more involved in the budget process.

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APPENDIX A

A CRITIQUE OF THE MODEL BUDGET ANALYSIS PROGRAM OF THE STATE OF WASHINGTON

The model budget analysis formula currently applied to the state colleges and universities of Washington has been analyzed to isolate weak spots which affect the libraries that prepare the budgets and the governing bodies who administer them. The Washington formula has been selected because it is among the most comprehensive formula systems and because of our familiarity with it, as part of the administrative team of one of the subject libraries. The intent is not to totally condemn the system, but to point out that even under a very thorough plan there are elements in a formula program that create unintentional and inequitable conditions. The statements below are taken from experience and are applicable to the Washington formula as it is applied in May of 1972. It should be noted that the formula designers are conscientiously working with the libraries to rectify the flaws as they appear.

100% as threshold level is misleading. The Washington formula is structured so that the arithmetic involved in calculating the minimum quantitative adequacy of holdings adds to 100%. Any allocation which results in a percentage below that figure indicates a collection that is quantitatively below the minimum required to support the academic and research objectives of the institution. The fallacy lies in the use of 100%. To state legislators and others judging adequacy from a distance, 100% looks like perfect and 85% is a fair score--misleading and unfair to say the least.

Comparing the formula to the normal A to F grading system, the minimum quantitative adequacy should be graded at D (threshold passing), not 100%. If a D is equal to 65%-75% of a perfect score, it appears that meeting the currently accepted minimum quantity adequacy could be rated 65%, not 100%.

There is no authority to the formula beyond the budget submission stage. The budget-preparing library administrator is bound, by direction, to apply the formula computations to all comparable elements of his budget. Each facet of the presentation is measured and calculated against needs established and reflects the needs according to what is considered influencing workload factors. Beyond this point the reviewing process is based upon dollar availability, dollar demands, and political pressures from many sources. Priorities are established and budgets adjusted within the jurisdiction performing the review. The result can be an imbalance among libraries caused by reasons not controllable by the formula. From that point on, the integrity of the system can break down at any point in the review process.

If the formula integrity is not maintained, regardless of where and how it was violated, serious administrative problems develop within each library. Quite often these problems occur between the technical services and public services staffs. If, for example, a library gross staffing factor is set at 88% of formula standard but the library administration decides to allocate

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staffing at a 90% level for public services and 60% for technical processes, this can cause internal problems between the two organizations for at least two reasons. First, the 60% level staff will feel the impact of a heavy per person workload and will develop a sense of being unfairly treated. Second, in this case the technical processes undoubtedly will be short-changed or bypassed causing serious problems in the public services areas, because a book that is on the shelf but not in the catalog is just as unavailable as a book that has been misshelved or lost. In either case the public services suffer.

Finally, the Formula is too complicated both in terms of understanding and application, and because of this lack of understanding those sitting in judgment and those finally applying the funds are frequently inclined to ignore the intent of the Formula--with a subsequent loss of integrity and loss of confidence in the formula technique of budgeting.

All non-formula costs appear to be luxuries. To the legislators and others who equate the institutions within a formula system, those requests which are not compared within the Formula appear to be frills and therefore not necessary. Without a thorough understanding of the mission of the various libraries, these non-comparable items are vulnerable to cut. The result can be an accentuation of inequities caused by the Formula itself.

There is no built-in recovery from lean budget years. Tight money years force cutbacks in library spending which cannot be recaptured without having the library appear to be exorbitant in its requests. Recovery in materials is more costly than the original program because of lack of availability and search requirements. Staffing reductions in processing areas create backlogs which are not recognized, and service reductions cause a gap in the library's relationships with its constituents which require additional effort to re-establish. There are no methods for including these recovery functions in the Formula request.

The Formula does not compensate the library adequately for change in advanced degree programs. The Formula permits a specified number of library resources to be calculated in the minimum quantitative adequacy of holdings for each advanced degree program offered, but when applying the Formula to live conditions two possibilities arise that are not covered.

First, there is no way to respond to adding or deleting an advanced degree program within a specific budget period. The formula computation is made over a year prior to the period covered and is frozen at that point. To provide adequate support for any new program, the anticipated acquisition pattern must be altered or a request for a special budget increase must be made.

Secondly, if during a budget period a new program is undertaken and one of the older ones withdrawn, the number of advanced programs remains the same. The quantitative adequacy of the collection is unchanged as far as the formula computations show, yet there is no provision for building to the proper support level for the new program.

The Formula puts a premium on development of splinter doctoral and masters programs. The Formula recognizes the necessity to provide additional resources for each doctoral and masters program field. The introduction of a

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new program in a covered field results in no additional resource base and, even more severe, the consolidation of programs causes a negative effect on the total formula base, because it leaves the library with fewer advanced degree programs and the same number of resources. Within the same frame of reference, the development of a splinter advanced degree program permits the library to increase the formula base. The result of this imbalance is the discouragement of consolidation of programs and the encouragement of introducing entirely new programs, and thus a possible restriction to good college and university management.

There is no provision for computer networks or other cooperative systems. The trend of library operation is toward coupling libraries together through computer networks or other joint operating arrangements. The stated purpose of these networks is to increase the effectiveness of the participating libraries beyond the capability of each performing as a unit. Even with the potential benefits recognized, the present formula does not make provision for such development. Neither does the State provide for an inter-institutional budget for such activity.

The formula is designed for manual operations only. During the past few years many innovations have been introduced into library processes which require investment in equipment and supplies not employed a short time ago. If these systems were properly developed, the efficiency of the personnel and service would be increased through the new methods. The problem in developing a library budget to the existing Formula is that there is no way to support this equipment and supply cost against such bases as the number of volumes acquired. Quite often the expenditure for equipment could replace a higher personnel cost, but still there is no way to reflect this in the Formula.

The formula does not provide for any research and development. The state of the art in library performance is changing rapidly due primarily to the adaptation of business tools and techniques to the library functions. As in any industrial development, there have to be forerunners who do the research and, oftentimes, produce the innovations through trial and error. The present Formula, with its rigid adherence to resources and staffing schedules based on population statistics, does not provide for systems development in the Washington college and university libraries.

Nonrecurring conversion activities are excluded by their very nature and in recognition of the fact that the Formula should not hamper the development of improved methods of operation. By isolating functions and work increments outside the Formula, even though the intent is to compensate the library for these conditions, the impact on the governing bodies is to question the activities and quite easily consider them "above the Formula" and, therefore, expendable. There are very few, if any, recorded cases where a library budget was increased as it went up the chain of administrative and legislative review. To the contrary, each level seems to claim stature by eliminating the easier items.

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Interlibrary loan problems are not isolated for consideration. Interlibrary loan is the library answer to collection deficiencies and generally it serves the purpose of the institutions fairly well. The problems which do not appear in the formula computations are ones of cost, time and resources.

In the case of the smaller library there is the burden of searching for the desired works and the bibliographic data of the request is quite often vague, incomplete or incorrect. The small library pays this price for the shortcomings of the collection, thus there is a double penalty for the small library collection.

The larger library which is both a borrower and a lender of interlibrary loan materials is handicapped by the fact that their borrowing is normally difficult to properly identify and then to find. In the lending process they must verify the requestor's bibliography, search the collection, add control procedures on the request, and mail the material. The resources too must be considered, for if the books are used to fill interlibrary loan requests they are not available for use by the prime constituency. The formula does recognize the internal demands on public service by weighing the various communities the library serves, but no provision is made to compensate in staff size the library that becomes a major source for interlibrary borrowing. When the resources are below the adequacy level this is particularly significant, because faculty and students turn to interlibrary loan to fill the collection inadequacies. Thus additional pressure is put on the understaffed interlibrary loan department.

No provision is made for space requirements as collections grow. The formula attempts to provide the library with resources and staff commensurate with academic requirements, and it also provides the figures by which the various academic libraries within the budgeting jurisdiction are compared to standards. As far as comparison is concerned, the major omission is space. College and university administrators and legislators would understand and be more sympathetic toward library requests for building expansion programs if they could see the adequacy of the physical plant based upon standards of current collections, user population, staffing and growth projection.

There is no recognition of the service an academic library gives to non-registered outside users. A survey released during the spring of 1972 by the public service units of the University of Washington Libraries indicated that approximately 17% of the reference activity surveyed was performed for non-university users.

If all of these were registered, the formula takes them into account weighted 1.0. On the other hand, if these users have not requested borrowing privileges, they are not counted in the user population of the library, and any service rendered to them is not provided for in the formula.

The formula states that the minimum number of acquisitions should be 5% of the number of library units held at the beginning of the year. Three conditions can cause this 5% base acquisition level to have a negative effect. First, to legislators and others controlling funding but not close to library problems, the 5% can become the set justifiable resource increase and any requests for a number of volumes over the 5% may be considered a bonus and possible excessive cost--to be eliminated in austere budget periods.

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Secondly, assuming two libraries within the same formula plan, the following chart indicates the impact of applying the 5% to both collections:

		Library A	Library B
Collection -	July 1	100,000 units	75,000 units
% of Formula -	July 1	100%	75%
5% acquisition level		5,000 units	3,750 units
Collection -	June 30	105,000 units	73,750 units

Library A

Volumes %
100%

105,000 vols.

Volumes No.
100,000

5%

Library B

Volumes %
75%

78,750 vols.

Volumes No.
75,000

5%

25,000 Jan. 1 -- Difference -- 26,250 Dec. 31

The net result is that Library B, because it was below 100% adequacy at the first of the year, becomes further behind as the years pass. In the case above, Library B was 25,000 units or 25% behind 100% adequacy and Library A at the beginning of the year and 26,250 units or 26% behind at the end of the year. This has a compounding effect which would put Library B approximately 32,000 units short of Library A at the end of five years.

Thirdly, in a tight money period the serials funds tend to overtake the monograph funds because of the continuing commitment to maintain subscriptions. During this period, a disproportionate amount of the overall resources money is spent on the serials, resulting in an abnormal mix of floor growth. In a seriously restricted budget period most, if not all, of the 5% growth factor could be serials. In any restricted budget the monograph intake is normally cut back before the serials program is curtailed.

Fallacy of experience costs. In a tight budget period a large research library has the problem of maintaining the quality of acquisitions at the level previously experienced and have a low number of volumes added, or lower the quality of material (and thus the price per unit) so that the number of volumes added will remain at the experience level. If the latter position is taken, the quality of the collection will suffer. This problem may not present itself as boldly in a community college where the collection is undergraduate oriented, yet there may be some degree of number manipulation possible.

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The formula excludes selected subject libraries because there is no counterpart in other institutions, yet many such subject branches are not excluded. The formula application manual defines certain functions that are excluded from formula consideration because of the lack of comparable units throughout the State. Within this list of exclusions are certain subject libraries which presumably are left out because there is no similar library at other schools, yet within the Formula there is no provision for weighing subjects when developing resources or staffing levels. This inconsistency has caused a number of exclusions which could be contained within the formula structure; or, taking the opposite approach, other subject libraries such as the Far Eastern Library at the University of Washington should be excluded to maintain consistency of philosophy throughout the formula system.

The differences in levels of service between libraries are not recognized in the public service staffing formula. Within the library of 1972 there are various services which develop because of local conditions, needs, or available skills. These most often dictate the level of service provided in a given library and are the services which sell the library to its users. The formula does not take into account these extra-library functions--thus, if performed, the staffs and operating funds to support them must be taken from the allocation set up for the conventional services which also must be offered. In essence, the library that tries to offer the extra services is handicapped when comparing staffing percentages to libraries that offer nothing more than normal conservative library service.

Another imbalance is caused by the fact that the computation for establishing the number of public service personnel is based upon a weighted count of the student and outside library users. This base ignores the services provided the teaching and research faculty and all other support staff who rely on the library for resource material. To compound the flaw, the level of service required by this category of user is commensurate with the level of academic endeavor, thus should be weighted accordingly.

The formula does not provide factors compensating for complexities in physical structure, decentralization or organization. The formula assumes a straight line effect of collection size and weighted user populations. There is no recognition of the fact that one library may have complicating elements not present in others, and that these elements will cause critical staffing and resources requirements not appropriate to other libraries. Complexity in one physical plant causes additional staffing because of communications required in, for example, a multi-level building. Distance is associated with size, therefore there are additional collection maintenance staff requirements. Traffic flow and control in large libraries often requires multiple doors, thus a need for additional security.

Decentralization of a large, or small, collection further complicates the public service staffing pattern and also has a direct impact on the technical processes staffing and the acquisitions programs. A decentralized system means an inflated need for minimum public service staffing simply because there are multiple locations that must be manned with at least a skeleton staff as long as the unit is open. Messenger service must be established to deliver materials between locations, and control procedures must be established. Each branch or location will have its own catalog which, at least for the

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collection in that location, duplicates the main catalog. Cataloging, and catalog maintenance is increased at least by a factor equal to the percent of the collection outside the main building. The acquisitions pattern is affected by the need for more duplication both in monographs and serials, which influences the disposition of the resources funds and also the binding funds.

Finally, as the physical structure becomes more complex, so must the organizational structure. More supervision is required and more time must be devoted to coordinating the decentralized units. Thus two libraries with equal size and equal user populations can be grossly out of balance because the structures are different, and there is no standard to apply to make them comparable.

The Formula makes no provision for library management or administrative staff. By the fact that the Formula distributes library administrative staff into the technical and public services on a head count pro rata, it recognizes the administrative expense. What it doesn't do is recognize that there is, or could be developed, a standard for the number of administrative personnel, and a staff category could be set up in the Formula for administration. It is possible for a library to be out of practical administrative/other staff ratios without being aware of the condition and its effect on the whole library. Too little administration can create a poor operation because of the lack of leadership. Too much administration can cause an unfair burden on the production staff. In either case the library suffers, yet the Formula provides no guarantee in this area. Other formula approaches have recognized the need for the inclusion of administrative costs as a separate item.

The Formula assumes an equal depth of cataloging in all institutions. When equating the number of technical processing people required to maintain a given level of intake, the Formula assumes that all institutions catalog to the same depth. No provision is made for variance between schools. If one library does not do analytics and catalogs to only two subjects, all institutions within the same budget program will be measured on the same base regardless of the need for deeper processing in a more complex school. The university, with a complex curriculum and cataloging requirements is allotted the same number of people to catalog a given number of books as a college with a relatively simple curriculum.

The Formula does not provide for the added complexities of technical processing associated with a large collection. Contrary to the statement in the manual which states, "In technical processes, the approach assumes that it becomes more difficult to process materials as the size of the collection increases," the Formula does not make this provision. The table on the following page provides the FTE technical processes staffs at various collection levels. The 5% increase and a 2% weeding number were used, so that equal measurement could be made at all levels. The FTE figures were divided into the actual number of books processed (adds and deletes) to determine the number of books per staff member. As the chart shows, the technical processes staff in a 2,000,000 volume library is scheduled to process about 25% more actual units per member than the members of the same organization in a library with 200,000 volumes.

TECHNICAL PROCESSES

Volumes Processed Per Staff Member
Collection Size Variable

		Library A	Library B	Library C	Library D	Library E
1.	Collection 7/1/72	200,000	300,000	1,000,000	1,500,000	2,000,000
2.	5% Increase	10,000	15,000	50,000	75,000	100,000
3.	2% Decrease	4,000	10,000	20,000	30,000	40,000
4.	Collection 6/30/73	206,000	315,000	1,030,000	1,545,000	2,060,000
5.	Units Processed	14,000	35,000	70,000	105,000	140,000
6.	WUP = $\frac{\text{Line 4} \times \text{Line 5}}{1,000,000}$	2,884	10,023	72,100	162,225	288,400
7.	x Factor	.01514	.00364	.00360	.00360	.00360
8.	=	43.66	119.68	259.56	584.01	1038.24
9.	+ Constant	87	194	202	322	322
10.	=	130.66	313.68	461.56	906.01	1360.24
11.	FTE = $\frac{\text{WU2}}{\text{Line 10}}$	26.06	37.45	123.08	179.05	212.02
12.	Volume per FTE = $\frac{\text{Line 5}}{\text{FTE}}$	537.22	609.12	564.61	586.43	660.32

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A P P E N D I X B

QUESTIONNAIRE RECAP

1. WHAT IS THE BUDGET STRUCTURE CURRENTLY USED IN THE LIBRARY?

The underlying purpose of this question was to determine to what extent performance or formula budgeting is employed and to set the stage for further exploration into budget preparation practices. The responses to this lead-in question were:

Line item		4
Formula		4
Lump sum		2
PPB		0
Zero base		0
Other		0
Combination		3
Lump sum/PPB	1	
Lump sum/formula	1	
Line item/lump sum	1	

It should be noted at this point in your reading that no particular budgeting technique is universally accepted.

When comparing the answers to the budgeting instructions issued to the various libraries, it became apparent that the budget type classification was not satisfactory, primarily because the definitions were not uniformly recognized. A high priority should be placed on developing clear, concise definitions of the various budget types, so that differences between the respective systems can be clearly understood.

2. AS THERE ANY INDICATION THAT YOUR LIBRARY IS MOVING TOWARD PPB OR FORMULA BUDGETING?

Following the lead-in question of current budget style, each library director or budget officer was asked to indicate any change he could see in future budget practices for his institution. The responses predicted upcoming changes but did not favor any particular type. In effect, they are dissatisfied with what they have and are shopping around. The tally of answers reflects major concern among academic libraries and attempts to improve existing budget practices. Those who reported foreseeable changes were currently on line item or combination systems. The trend was reported as:

Toward PPB	5
Toward formula	1
Toward zero base	1
No change contemplated	6

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In no case did I find a library going away from formula or PPB to another format. Possibly the lack of long term experience and critical analysis of these systems can be credited with the one way trend. Time may reveal a different picture.

3. WHAT PREPARATION IS THE LIBRARY MAKING IN ANTICIPATION OF CHANGES IN BUDGETING PRACTICES?

To add depth to the previous question, library administrators were asked to give a thumbnail sketch of any preparations they were making in anticipation of budget format changes. Of the seven institutions reporting upcoming changes, three of them stated they were doing nothing pending administrative direction. Two of the libraries had study projects underway, and one had hired a budget planning person who will be responsible for studies and any preparation they may undertake.

There is no definable trend toward standardization of budgeting techniques, only evidence of unrest and frustration within a state of change. A great deal of apprehension was expressed over the library's role in the various emerging techniques.

4. DO ACADEMIC DEPARTMENTS BUDGET FOR LIBRARY MATERIALS, THEN TURN THE BUDGET OVER TO THE LIBRARY FOR DISPOSITION?

Twelve "no" answers were received--which isn't surprising. The universally consistent negative answer was expected. The reason for the question was not so much to find a variance, but in a subtle way to raise the issue of faculty support for the library. In no case did we delve into the subject, but I believe that some soul searching was instigated because of our conversations. This is a point each of us can ponder, because without a positive, understanding relationship, the library can be a very lonely place when the university dollars are handed out.

5. DOES THE UNIVERSITY TREAT BUDGET ITEMS "ABOVE THE LINE" DIFFERENTLY THAN THOSE "BELOW THE LINE?"

An attempt was made to learn if direct, out-of-pocket expenses were treated with a different level of concern than those expenses charged to the library but costing the university no more outlay. The treatment of below the line expenses, some controllable by the library and some not, can have a significant bearing on the funds allocated for materials and staffing. There can also be a possible impact on the amount of computerization that can be undertaken.

Below-the-line treated differently	3
Below-the-line not treated differently	9
No comment	1

6. IS THE LIBRARY CHARGED FOR ON-CAMPUS COMPUTER TIME AND SERVICES?

The concern over computerization was followed up by asking if the

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library was charged for computer use. The responses were:

Yes	10
No	2
R & D only	1

One of the schools reporting "yes" was associated with a multi-library circulation system which was state funded. All other applications were charged to that library.

7. HOW ARE ENCUMBERED FUNDS HANDLED AT THE END OF THE FISCAL YEAR OR BIENNIUM?

One of the problems which plagues acquisitions and budgeting personnel is the disposition of encumbered funds at the end of a fiscal year or biennium. The treatment of these funds is generally established by state accounting codes and is applicable to all organizations governed by such codes. The effect on the library is the planning for best use of materials funds. The responses were nearly evenly divided:

> Seven libraries continued the encumbrance in one form or another without carrying over the budgeted funds to cover the payment of the encumbrances.
>
> Five libraries were authorized to continue the encumbrance with all allocated but undisbursed funds extending into the new fiscal period.

In one case, acquisitions controls its budget on order placement, and in the other instance it must attempt the heroic task of control on deliveries. This forces over-encumbrance which must be considered a subtraction from the upcoming fiscal period when reporting to the selection personnel.

8. IS THE LIBRARY DIRECTOR A MEMBER OF THE HIGHEST POLICY MAKING BODY ON CAMPUS?

Yes	7
No	5
No, but one librarian is	1

The question, and the even split between "yes" and "no" provides some insight on the library's position in presenting its case for a share of the university's limited funds. The mean of the five libraries reporting "yes" and submitting the library's percent of the university's general and educational expenditures was 4.68%. The four that said "no" and offered the percent of G & E was 2.80%. No conclusion can be drawn from these figures, but indeed the indication suggests the library that can represent itself on the top university committees fares better than

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the one that cannot.

9. DO THE LIBRARIANS HAVE FACULTY OR ACADEMIC STATUS? DOES THEIR STATUS HAVE ANY EFFECT ON THE BUDGET?

When questioning the library's position on campus we felt the librarians' position also might provide a clue to the acceptance of the library in the academic community. The responses to "Do librarians on your campus have faculty or academic status?" were:

Faculty	5
Academic	6
Neither	2

Of the five libraries reporting faculty status for librarians, only three reported their directors on the highest policy making body. Two of the universities gave the librarians academic status and had their directors on the policy body.

Here again we must not draw conclusions, but the percent of university general and educational expense to the library appears to be favorably influenced by having faculty status, as evidenced by the following figures:

Faculty status	4.35% of G & E
Academic status	4.18% of G & E
Neither	2.30% of G & E

10. DO YOU ANTICIPATE AN INCREASE OR DECREASE IN THE LIBRARY BUDGETS?

To get the feeling of what academic libraries can look forward to in the near future, each library administrator was asked how he saw his budget prospects in the future. If the sample is representative, the future is not too bright:

Decrease	8
Holding	4
Increase	1

With rising costs, even a holding budget can mean a decrease in operating funds. When asked how or where cuts will be made, the consensus was for reducing services and cutting down staff size, so that an attempt can be made to hold acquisition lines.

11. IS YOUR LIBRARY AFFECTED BY THE DRYING UP OF FEDERAL FUNDS? HOW?

The one budget or fund source all of us are interested in is the federal grant program. Twelve of the thirteen libraries stated a feeling that the federal money could be drying up, which isn't a surprising observation. The serious aspect of this cutback is that most of the libraries plan to cut back resources and staff to compensate for the reduced federal funds. One library said it would cut back on progress,

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and one said it would reduce overhead. In a situation such as projected, an administrator must make the least expensive decision. I am not proposing an answer but merely raising the question. Is it easier to recover from a reduced acquisitions program or from additional cutbacks in hours or services?

12. IS THERE A LOBBY IN THE STATE LEGISLATURE REPRESENTING THE LARGER ACADEMIC LIBRARIES?

No	9
Faculty lobby only	2
President's office	1
Yes	1

The libraries, with one exception, depend on others to represent them in their state legislatures. This then dictates to the library just where it must do its selling--to the university administration--and probably supports the assumption made above that those libraries represented on the top university policy making body fare better than those which are not. Again, we do not know the answer, but we do have an idea as to where we must focus our fund raising pleas (or is it pleas?).

13. IF THE CURRENT DOWNWARD TREND IN LIBRARY BUDGETS CONTINUES, WHAT WILL BE THE EFFECT ON LIBRARY SCHOOLS?

The general opinion expressed by all persons interviewed was that there will be three or four related effects:

a. There will be fewer job openings for graduating librarians.
b. Hiring standards will be higher.
c. Entrance standards will be raised by the library schools.
d. There will be a lengthening of formal library education.

14. IS THERE A FUTURE FOR FORMULA BUDGETING IN LARGE ACADEMIC LIBRARIES?

With all the hue and cry over formula budgeting applied to state academic libraries, we asked if the library administrators thought there was a future for such practice. The answers were:

Yes	8
No	2
No opinion	3

This does not say whether these librarians thought the formula approach per se was good, but only that change was coming.

15. IS THERE A FUTURE FOR PPBS BUDGETING IN LARGE ACADEMIC LIBRARIES?

Yes	5
No	4
No opinion	1

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This question related to the inquiry on formula, and evaluated jointly, appears to indicate anticipation of some change in the requests for budget justification being applied to libraries in the future. Of the seven administrators who predict PBB, five of them also foresaw formula budgeting. This could indicate a forecast of some change in budget justification but not a clear picture of what it may be. Only two administrators interviewed stated they saw no change at all in their current practices. One institution reported as moving to PBB when in fact it was moving toward formula. This reinforces the opinion uncovered in question number regarding the need for understanding of different types of budget techniques.

16. TO WHOM DOES THE LIBRARY DIRECTOR REPORT ON BUDGET MATTERS?

Reporting relationships of library directors seem to be fairly standardized based upon the responses:

Vice-President for Academic Affairs	7
Provost	2
Vice-President, Educational Services	1
President	1
Low level administrative officer	1
Don't know	1

Making an assumption that the provost is the top academic administrator on some campuses, then one of twelve libraries report to the same officer as do the academic departments. Without studying the complete organization charts and job descriptions, titles may be misleading, but a fairly clear picture is presented by the raw counts above. One director did not know to whom he reported.

17. WHAT POSITION IN THE LIBRARY IS ASSIGNED THE RESPONSIBILITY FOR PREPARING THE LIBRARY BUDGET

Director	4
Associate Director	2
Budget Officer	5
General Administrative and Research Officer	1
Assistant Director, Technical Processes	1

In all cases the budget is compiled with the assistance and input from the various department heads.

18. IS THE ADMINISTRATOR RESPONSIBLE FOR PREPARING THE LIBRARY BUDGET TRAINED IN BUSINESS OR ACCOUNTING?

One trend that seems to be emerging is the appearance of business trained budget managers in academic libraries. This trend appears to be in motion, and those administrators who do not have such skilled

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members now believe the addition would be valuable. The answers to "Does the library have a business trained budget manager?" were:

Yes	5
Getting one next year	1
No	7

Of the six that do not have such a person now, five said they would welcome one.

19. DO ACADEMIC HEADS OR OTHERS OUTSIDE THE LIBRARY GET INVOLVED IN PREPARING THE LIBRARY BUDGET?

Without exception among the universities surveyed, compiling the budget request is done solely by the library administration. None of the library officials interviewed made any comment about their consulting with the academic departments before developing their program funding requirements for the upcoming fiscal period. The closest to any such pre-exposure of library needs to the constituent groups is a faculty library committee approval before the budget is submitted to the university. There may be a potential here that has not been tapped, and I raise the question only for your thought.

20. IS THE LIBRARY CONSULTED WHEN NEW ACADEMIC PROGRAMS ARE PLOTTED FOR THE CAMPUS?

One of the major concerns of all the library administrators interviewed is the addition of new academic programs and the impact to the library. The most positive response to questions of library participation in program review was only slightly encouraging. The prevailing practice on the campuses visited is to have new programs established without prior consideration for library support requirements. The general comment among librarians is that this practice more often than not catches the library in an underfunded position, and these new programs suffer because the library does not have adequate consideration prior to the adoption of new avenues of research.

The lack of library material support for new programs leaves the library with a potential increase in interlibrary borrowing. Thus the academic library acquires an added burden in one way or another.

21. IS THERE A PROCEDURE FOR INCREASING THE LIBRARY BUDGET DURING THE BUDGET PERIOD?

Yes	9
No	4

22. CAN INTERNAL SHIFTS BE MADE IN THE LIBRARY BUDGET WITHOUT OUTSIDE APPROVAL, ASSUMING THERE IS NO CHANGE IN THE GRAND TOTAL?

Minor changes	5
Within object class only	5
None	3

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The two questions relating to changes to the approved budget were presented to learn something of the ability of libraries to adjust to conditions not foreseen when the budget was prepared. They also give us some clue as to the controls that are put upon the library's performance to budget. In some institutions a switch from purely manual to a partially mechanized system may cause budget problems, if the change wasn't planned when the original budget was prepared. This same rigidity, while we are discussing it, appears to be built into formula budgets also. Often there is a correlation between, for example, materials acquisition quantity and staff count--no provision for replacement of staff with funds for mechanical equipment.

23. CAN THE UNIVERSITY RECAPTURE UNSPENT LIBRARY FUNDS DURING THE FISCAL PERIOD?

The other side of the budget flexibility coin is the provision for deducting or recapturing funds from the library during the budget period. The answers were evenly distributed:

Yes	6
No	7

Those who answered "yes" had qualified answers. One library stated that the maximum negative adjustment was 6% of the original budget. The others stated there was no official limit to the amount that could be removed from the library's budget, but even with the authority to remove funds the university had rarely or never taken such action.

The practice of monthly recapture of unused salary money is excluded from the negative adjustment question, because this common practice does not constitute an adjustment to the budget--only a recognition that allocated funds are available to be held in reserve or redirected by the university.

24. DOES THE LIBRARY RECEIVE EFFECTIVE PERIODIC BUDGET STATUS REPORTS?

An attempt was made to determine the feedback or status reporting procedures employed in academic libraries. The answers were vague and often contradictory. When reviewed and analyzed, there was nothing to report for this question except that monthly budget status reports are received but they are late, little used, and of little value. We possibly should ask ourselves why this is. Is it because we do not have to rely on monthly budget information to make the decisions required to operate, or is the timing such that the information is not timely; is the information the wrong information to offer the help we need; are we indeed not doing as much managing as we could? I am not making an indictment but simply stimulating our thinking. What, if anything, should we do to improve our month to month operations?

25. DOES THE LIBRARY REPORT ACTIVITY/PRODUCTION INDICATORS ON A PERIODIC BASIS?

The periodic flow of budget status from the university administration

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to the library is weak at best, as we have seen above. This raises the reverse question of what the library does to report activities to the university. The same lack of effective reporting exists. Of the thirteen libraries studied, ten stated they made no activity reports and the three others said they report only on an annual basis. There is possibly a ray of hope though, for there was one report of a university/library that is developing an activity reporting system.

26. DOES THE LIBRARY HAVE ANY PRODUCTIVITY OR COST BENEFIT ANALYSIS ON A ROUTINE BASIS?

The answer to the above may be given in part at least by the responses to the query on the questionnaire:

No	8
Developing techniques	5

One facet of production reporting or benefit analysis that develops almost as a subconscious effort is the creation of standards or bases from which to measure activity. If indeed there are analysis programs and not merely reporting procedures being developed, there has to be a benchmark from which to measure. We, as librarians, have often frowned at the management tool called standards, but possibly we have let our tendencies to tout our scholarship role interfere with our responsibilities as supervisors and managers, again often unacceptable wording. Let me repeat at this point that we are not taking any stands in this paper--only reporting and raising issues for your consideration as you review your library budget struggles.

27. DOES THE LIBRARY PARTICIPATE IN ANY COMPUTERIZED NETWORK OR INFORMATION SHARING SYSTEM?

No	4
Yes	9

Networks and other information sharing systems apparently are becoming a way of life in our present day library world. Out of thirteen libraries, nine stated they were associated with at least one such organization. Of major interest is the amount of outside funding for such participation which ranges from no outside aid to $100,000 per year. If these outside funds are not reported in statistical recaps such as the ARL Academic Library Statistics, or if they are reported differently by various libraries, there is no common base upon which to analyze or compare one library with others reporting. This makes a strong argument for more definitive instructions on statistics compilation for publication.

28. IS THE STATE LIBRARY OF ANY ASSISTANCE IN THE BUDGET PROCESS?

No	12
Yes	1

The libraries associated with state universities were asked if their

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state libraries were of any help to the academic libraries within the state. One library made an affirmative answer, and in their situation the university library felt this cooperation and recognition was very satisfactory. Actually, the university library was included within a state operated computer services structure.

The other twelve university library administrators indicated that there was no budgeting procedure assistance provided by their state libraries. To temper this rather blunt comment about state level agencies, it should be noted that there are some good signs developing. Two states at least have legislative bodies which now recognize that research libraries play a central role in meeting the needs of their citizens by designating them as reserve/reference centers and designating a stipulated amount to defray some of the cost of providing service outside their immediate communities.

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